

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT  
APPEALS AND INTERFERENCES

In Re Application of: )  
Kee Yean Ng et al. )  
Serial No.: 10/616,759 ) Group Art Unit: 2891  
Filed: July 9, 2003 ) Examiner:  
For: LIGHT EMITTING DIODE )  
UTILIZING A DISCRETE )  
WAVELENGTH-CONVERTING )  
LAYER FOR COLOR )  
CONVERSION ) Atty Dkt. 70021175-1

**APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Examiner:

This Appeal Brief is submitted in response to the final rejection of the claims mailed April 2, 2008. A Notice of Appeal was filed on May 19, 2008.

This brief contains items under the following headings as required by 37 CFR §41.37 and MPEP §1206:

- (1) Real Party In Interest
- (2) Related Appeals and Interferences
- (3) Status of Claims
- (4) Status of Amendments
- (5) Summary of Claimed Subject Matter
- (6) Grounds of Rejection to be Reviewed on Appeal
- (7) Argument
- (8) Claims Appendix
- (9) Evidence Appendix
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**(1) REAL PARTY IN INTEREST**

The real party in interest in the above-referenced patent application is Avago Technologies ECBU IP (Singapore) Pte. Ltd., having an address at No. 1 Yishun Avenue 7, Singapore 768923.

**(2) RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences currently known to appellants, appellants' legal representatives or the assignee, which will directly affect, or be directly affected by, or have a bearing on, the Board's decision.

**(3) STATUS OF CLAIMS**

Claims 1-16 were filed with the application. Claims 7 and 18-24 are currently pending in the application. The rejection of claims 7 and 18-24 is appealed. Claims 1-6 and 8-17 have been canceled.

**(4) STATUS OF AMENDMENTS**

An Amendment After Final was filed on May 21, 2008 correcting informalities. The word "performed" was changed to "preformed" in the appropriate claims.

**(5) SUMMARY OF CLAIMED SUBJECT MATTER**

Appellants' invention as independently claimed is summarized and explained below with reference numerals, specification page numbers and drawing figure numbers indicating where the claim finds support in the specification and drawings.

7. A method for fabricating a light source (300) comprising [Fig. 4; pg. 6, line 30]:

mounting a chip (310) having a primary light source on a substrate (202), said primary light source emitting light of a first wavelength [Fig. 4; pg. 5, line 32; pg. 7, line 2];

connecting power terminals on said chip (310) to corresponding power terminals on said substrate (202) for powering said primary light source [Fig. 4; pg. 5, line 32; pg. 7, line 2] ; and

mounting a performed transparent cap (307) over said chip (310), said cap (307) comprising a wavelength-converting material for converting a portion of said light of said first wavelength to a second wavelength, wherein said transparent cap (307) comprises a spherical surface and has a constant thickness [Fig. 4; pg. 7, lines 1-2].

22. A method for fabricating a light source (100) comprising [Fig 2; pg. 4, line 11]:

mounting a chip (105) having a primary light source on a substrate (101), said primary light source emitting light of a first wavelength [Fig. 2; pg. 5, lines 2-5];

connecting power terminals on said chip (105) to corresponding power terminals (112, 113) on said substrate (101) for powering said primary light source [Fig. 2; pg. 5, line 2-5]; and

mounting a performed transparent cap (107) over said chip (105), said cap (107) comprising a wavelength-converting material for converting a portion of said light of said first wavelength to a second wavelength, wherein said transparent cap (107) comprises a planar sheet of a single crystal phosphor [Fig. 2; pg. 5, lines 1-5].

24. A method for fabricating a light source (100) comprising [Fig 2; pg. 4, line 11]:

mounting a chip (105) having a primary light source on a substrate (101), said primary light source emitting light of a first wavelength [Fig. 2; pg. 5, lines 2-5];

connecting power terminals on said chip to corresponding power terminals (112, 113) on said substrate (101) for powering said primary light source [Fig. 2; pg. 5, line 2-5]; and

mounting a performed transparent cap (107) over said chip (105), said cap (107) comprising a wavelength-converting material for converting a portion of said light of said first wavelength to a

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second wavelength, wherein said transparent cap (107) comprises a planar sheet having a constant thickness [Fig. 2; pg. 5, lines 1-5].

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**(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- A. Claims 7, 19, 21 and 23-24 stand rejected under 35 U.S.C. 102(b) as being anticipated by Kawae (US Patent Application Publication 2002/0080501).
- B. Claims 7, 18-21, and 23-24 stand rejected under 35 U.S.C. 102(e) as being anticipated by Ibbetson (US Patent Application Publication 2005/0093430).
- C. Claim 24 stands rejected under 35 U.S.C. 102(e) as being anticipated by Shiiki (US Patent 6,762,551).
- D. Claims 18 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kawae (US Patent Application Publication 2002/0080501) in view of Lin et al. (US Publication No. 2003/0098651).
- E. Claim 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Shiiki (US Patent 6,762,551).
- F. Claims 22 and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Reeh (US Patent Application Publication 2001/0000622) in view of Gueller-Mach(US Patent 6,630,691).

## (7) ARGUMENT

### Argument re Issue A

Claims 7, 19, 21 and 23-24 stand rejected under 35 U.S.C. 102(b) as being anticipated by Kawae (US Patent Application Publication 2002/0080501). Appellants respectfully assert, for at least the reasons advanced below, that claims 7, 19, 21 and 23-24 are not anticipated by Kawae (US Patent Application Publication 2002/0080501).

### Claims 7, 19, 21 and 23

Claim 7 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and

mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a spherical surface and has a  
constant thickness.

Claim 19 recites the following:

The method of Claim 7 wherein said primary light source comprises an LED.

Claim 21 recites the following:

The method of Claim 7, wherein said transparent cap comprises a phosphor material suspended in a clear compound.

Claim 23 recites the following:

The method of Claim 7, wherein said transparent cap comprises a inverted cavity, said chip being on a concave side of said cavity.

Regarding claims 7 and 21, Appellants disagree with the Examiner's reading of Kawae. The Examiner indicates that Kawae teaches a transparent cap comprising a spherical surface and has a constant thickness (see Fig. 9 and paragraph 59) Appellants submit that Figure 9 does not depict a cap with a constant thickness. Rather, Figure 9 depicts a thickness of indeterminate thickness. Nowhere in Kawae is it indicated that the cap in Figure 9 is a constant thickness.

Moreover, Kawae teaches away from a cap with a constant thickness. Paragraph 59 of Kawae teaches that the thickness of the cover may be varied along the light intensity distribution of an LED such that the cover is thicker with stronger light intensity and thinner with weaker light intensity. Hence, Appellants submit that the

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Examiner has not shown that Kawae has shown that the cap has a constant thickness, as required by the limitations of claims 7 and 21.

Kawae does not disclose all the elements of claims 7 and 21. For at least the reasons advanced above, Appellants respectfully assert that the current rejection of claims 7 and 21 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claims 7 and 21 be withdrawn.

Claims 19 and 23 are allowable at least as depending from allowable base claim 7. For purposes of this appeal, claims 19 and 23 stand or fall with claim 7.

#### Claim 24

Claim 24 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate, said primary light source emitting light of a first wavelength;

connecting power terminals on said chip to corresponding power terminals on said substrate for powering said primary light source; and

mounting a performed transparent cap over said chip, said cap comprising a wavelength-converting material for converting a portion of said light of said first wavelength to a

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second wavelength, wherein said transparent cap comprises a planar sheet having a constant thickness.

Regarding claim 24, the Examiner states that Kawae teaches a uniform planar cap. (See Final Office Action pg. 3). Appellants submit that Figure 8 does not depict a cap with a constant thickness. Rather, Figure 8 depicts a thickness of indeterminate thickness. Nowhere in Kawae is it indicated that the cap in Figure 8 is constant thickness.

For at least the reasons advanced above, Appellants respectfully assert that the current rejection of claim 24 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claim 24 be withdrawn.

**Argument re Issue B**

Claims 7, 18-21, and 23-24 stand rejected under 35 U.S.C. 102(e) as being anticipated by Ibbetson (US Patent Application Publication 2005/0093430). Appellants respectfully assert, for at least the reasons advanced below, that claims 7, 18-21, and 23-24 are not anticipated by Ibbetson (US Patent Application Publication 2005/0093430).

**Claims 7, 18-21, and 23-24**

Claim 7 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and  
mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a spherical surface and has a  
constant thickness.

Claim 18 recites the following:

The method of Claim 7 wherein said transparent cap  
comprises glass.

Claim 19 recites the following:

The method of Claim 7 wherein said primary light source comprises an LED.

Claim 20 recites the following:

The method of Claim 7, wherein said primary light source comprises a laser diode.

Claim 21 recites the following:

The method of Claim 7, wherein said transparent cap comprises a phosphor material suspended in a clear compound.

Claim 23 recites the following:

The method of Claim 7, wherein said transparent cap comprises a inverted cavity, said chip being on a concave side of said cavity.

Claim 24 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and

mounting a performed transparent cap over said chip, said cap comprising a wavelength-converting material for converting a portion of said light of said first wavelength to a second wavelength, wherein said transparent cap comprises a planar sheet having a constant thickness.

Regarding claim 7, Appellants disagree with the Examiner's reading of Ibbetson. The Examiner indicates that Ibbetson teaches encapsulating laser and LED (paragraph 35) with a soluble phosphor suspended in a uniform thickness cap (see e.g. item 38). Appellants submit that item 38 does not depict a cap with a constant thickness. Rather, item 38 depicts a thickness of indeterminate thickness. Nowhere in Ibbetson is it indicated that the cap in item 38 is a constant thickness.

Hence, Appellants submit that the Examiner has not shown that Ibbetson has shown that the cap has a constant thickness, as required by the limitations of claim 7. For at least the reasons advanced above, Appellants respectfully assert that the current rejection of claim 7 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claim 7 be withdrawn.

Claims 18-21 and 23 are allowable at least as depending from allowable base claim 7. For purposes of this appeal, claims 18-21 and 23 stand or fall with claim 7.

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Regarding claim 24, the Examiner states that Ibbetson teaches a lens 36 having uniform thickness throughout. (See Final Office Action pg. 7). Appellants submit that Ibbetson teaches a lens 36 where the thickness of the lens may vary. Paragraph [0052] of Ibbetson teaches that "...thickness 44 depends on the type and dimension of light source 12 and submount 14."

For at least the reasons advanced above, Appellants respectfully assert that the current rejection of claim 24 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claim 24 be withdrawn.

**Argument re Issue C**

Claim 24 stands rejected under 35 U.S.C. 102(e) as being anticipated by Shiiki (US Patent 6,762,551). Appellants respectfully assert, for at least the reasons advanced below, that claim 24 is not anticipated by Shiiki (US Patent 6,762,551).

**Claim 24**

Claim 24 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and  
mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a planar sheet having a constant  
thickness.

Regarding claim 24, the Examiner states that Shiiki teaches all the elements of claim 24 (pg. 4, Final Office Action). The Examiner further states that since 5 is a layer it is reasonable to interpret the layer as having a constant thickness since Shiiki teaches no optical shaping done by the element (pg. 4, Final Office Action). Appellants

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submit that because no optical shaping is done by the element does not mean the layer has a constant thickness.

For at least the reason advanced above, Appellants respectfully assert that the current rejection of claim 24 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claim 24 be withdrawn.

**Argument re Issue D**

Claims 18 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kawae (US Patent Application Publication 2002/0080501) in view of Lin et al. (US Publication No. 2003/0098651). Appellants respectfully assert, for at least the reasons advanced below, that claims 18 and 20 are not unpatentable over Kawae (US Patent Application Publication 2002/0080501) in view of Lin et al. (US Publication No. 2003/0098651).

**Claims 18 and 20**

Claim 18 recites the following:

The method of Claim 7 wherein said transparent cap comprises glass.

Claim 20 recites the following:

The method of Claim 7, wherein said primary light source comprises a laser diode.

Claim 7 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and

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mounting a performed transparent cap over said chip, said cap comprising a wavelength-converting material for converting a portion of said light of said first wavelength to a second wavelength, wherein said transparent cap comprises a spherical surface and has a constant thickness.

Claims 18 and 20 are dependent on claim 7 and therefore include all limitations of claim 7.

Claims 18 and 20 are allowable at least as depending from allowable base claim 7. For purposes of this appeal, claims 18 and 20 stand or fall with claim 7.

**Argument re Issue E**

Claim 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Shiiki (US Patent 6,762,551). Appellants respectfully assert, for at least the reasons advanced below, that claim 22 is not unpatentable over Shiiki (US Patent 6,762,551).

**Claim 22**

Claim 22 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and  
mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a planar sheet of a single crystal  
phosphor.

The Examiner on page 5 of the Final Office Action states that Shiiki does not explicitly teach a single crystal phosphor. The Examiner further states that it would have been obvious to one of

ordinary skill in the art at the time of the invention to replace the phosphor with single crystal phosphor of say YAG:Ce.

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). In addressing obviousness determinations under 35 U.S.C. § 103, the Supreme Court in *KSR International Co. v. Teleflex Inc.*, No. 04-1350 (April 30, 2007), reaffirmed many of its precedents relating to obviousness including its holding in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). In *Graham*, the Court set out an objective analysis for applying the statutory language of §103:

Under §103, the scope and content of the prior art are to be determined, differences between the prior art and the claims at issue are to be ascertained, and the level of ordinary skill in the pertinent art are to be resolved. Against this background the obviousness or non-obviousness of the subject matter is to be determined. Such secondary considerations as commercial success, long-felt but unresolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. *KSR, slip op.* at 2 (citing *Graham*, 383 U.S. at 17-18).

In *KSR*, the Court also reaffirmed that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *Id.* at 14. In this regard, the *KSR* court stated that "it can be important

to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does ... because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *Id.* at 14-15. Traditionally, to establish a *prima facie* case of obviousness, the CCPA and the Federal Circuit have required that the prior art not only include all of the claimed elements, but also some teaching, suggestion, or motivation to combine the known elements in the same manner set forth in the claim at issue. See, e.g., *ASC Hospital Systems Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (holding that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination.); *In re Mills*, 16 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 1990) (holding that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination). In *KSR*, the court noted that the demonstration of a teaching, suggestion, or motivation to combine provides a "helpful insight" in determining whether claimed subject matter is obvious. *KSR*, *slip op.* at 14. However, the court rejected a *rigid* application of the "TSM" test. *Id.* at 11. In this regard, the court stated:

The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and explicit content of issued patents. The diversity of inventive pursuit and of modern technology counsels against limiting the analysis in this way. In many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends. *Id.* at 15.

In other words, the *KSR* court rejected a rigid application of the TSM test which requires that a teaching, suggestion or motivation to combine elements in a particular manner must be explicitly found in the cited prior art. Instead, the *KSR* court favored a more expansive view of the sources of evidence that may be considered in determining an apparent reason to combine known elements by stating:

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art all in order to determine whether there was an apparent reason to combine in the known elements in the fashion claimed in the patent at issue. *Id.* at 14.

The *KSR* court also noted that there is not necessarily an inconsistency between the idea underlying the TSM test and the *Graham* analysis, and it further stated that the broader application of

the TSM test found in certain Federal Circuit decisions appears to be consistent with *Graham*. *Id.* at 17-18 (citing *DyStar Textilfarben GmbH and Co. v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (2006) (“Our suggestion test is in actuality quite flexible and not only permits but requires consideration of common knowledge and common sense”); *Alza Corp. v. Mylan Labs, Inc.*, 464 F.3d 1286, 1291 (2006) (“There is flexibility in our obviousness jurisprudence because a motivation may be found *implicitly* in the prior art. We do not have a rigid test that requires a teaching to combine ... ”).

Furthermore, the KSR court did not diminish the requirement for objective evidence of obviousness. *Id.* at 14 (“To facilitate review, this analysis should be made explicit. See *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”); see also, *In re Lee*, 61 U.S.P.Q.2d 1430, 1436 (Fed. Cir. 2002) (holding that the factual inquiry whether to combine references must be thorough and searching, and that it must be based on *objective evidence of record*).

When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). The Federal Circuit has warned that the Examiner must not, "fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *In re Dembiczak*, F.3d 994, 999, 50 U.S.P.Q.2d 52 (Fed. Cir. 1999) (quoting *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983)).

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983); M.P.E.P. § 2145. Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959); see M.P.E.P. § 2143.01(VI). If the proposed modification or combination would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed

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modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); see M.P.E.P. § 2143.01(V).

Regarding independent claim 22, it appears that the Examiner's statement that it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the phosphor with single crystal phosphor is based solely on hindsight derived from Appellants' specification.

For at least the reason advanced above, Appellants respectfully assert that the current rejection of claim 22 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claim 22 be withdrawn.

**Argument re Issue F**

Claims 22 and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Reeh (US Patent Application Publication 2001/0000622) in view of Gueller-Mach(US Patent 6,630,691). Appellants respectfully assert, for at least the reasons advanced below, that claims 22 and 24 are not unpatentable over Reeh (US Patent Application Publication 2001/0000622) in view of Gueller-Mach(US Patent 6,630,691).

**Claims 22 and 24**

Claim 22 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and

mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a planar sheet of a single crystal  
phosphor.

Claim 24 recites the following:

A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and  
mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a planar sheet having a constant  
thickness.

With regard to claims 22 and 24, the Examiner on page 5 of the Final Office Action states that Reeh is silent in regards to the thickness however recites a lens on the down converter layer 6. The Examiner reasons on page 6 of the Final Office Action that it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed layer 6 of constant thickness in order to provide a flat surface for applying the lens increasing overall performance of the lens.

Appellants disagree with the Examiner's reasoning. It does not follow that because a lens is going to be placed on a layer, that the layer **must** be of constant thickness. For example, a lens may be placed on a layer without constant thickness. In this example, the

lens would make contact with the areas of the layer that are thicker than other areas of the layer.

The Examiner on page 6 of the Final Office Action states that Reeh is silent in regards to whether it is single crystal. The Examiner also states on page 6 of the Final Office Action that Gueller-Mach teaches a single crystal layer of YAG:Ce may be used as a phosphor. Finally, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed layer 6 of Reeh using a layer of single crystal YAG:Ce.

Regarding independent claims 22 and 24, it appears that the Examiner's proposed combination of Reeh and Gueller-Mach is based solely on hindsight derived from Appellants' specification.

For at least the reasons advanced above, Appellants respectfully assert that the current rejection of claims 22 and 24 is improper and should, therefore, be overruled. Therefore, Appellants respectfully request that the rejection of claims 22 and 24 be withdrawn.

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Respectfully submitted,

KLAAS, LAW, O'MEARA & MALKIN, P.C.

May 30, 2008

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**(8) CLAIMS APPENDIX**

1-6. ( Canceled)

7. A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and

mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a spherical surface and has a  
constant thickness.

8-17. (Canceled)

18. The method of Claim 7 wherein said transparent cap  
comprises glass.

19. The method of Claim 7 wherein said primary light source  
comprises an LED.

20. The method of Claim 7, wherein said primary light source comprises a laser diode.

21. The method of Claim 7, wherein said transparent cap comprises a phosphor material suspended in a clear compound.

22. A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;  
connecting power terminals on said chip to corresponding  
power terminals on said substrate for powering said primary light  
source; and

mounting a performed transparent cap over said chip, said cap  
comprising a wavelength-converting material for converting a portion  
of said light of said first wavelength to a second wavelength, wherein  
said transparent cap comprises a planar sheet of a single crystal  
phosphor.

23. The method of Claim 7, wherein said transparent cap  
comprises a inverted cavity, said chip being on a concave side of  
said cavity.

24. A method for fabricating a light source comprising:  
mounting a chip having a primary light source on a substrate,  
said primary light source emitting light of a first wavelength;

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connecting power terminals on said chip to corresponding power terminals on said substrate for powering said primary light source; and

mounting a performed transparent cap over said chip, said cap comprising a wavelength-converting material for converting a portion of said light of said first wavelength to a second wavelength, wherein said transparent cap comprises a planar sheet having a constant thickness.

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**(9) EVIDENCE APPENDIX**

No evidence pursuant to §§ 1.130, 1.131 or 1.132 or entered by or relied upon by the Examiner is being submitted.

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**(10) RELATED PROCEEDINGS APPENDIX**

No related proceedings are referenced in (2) above.  
Accordingly, no copies of decisions in related proceedings are provided.